

Integrated Sensing and Control of Aeroelastic Deformation (ISCAD) Toolbox, Phase I

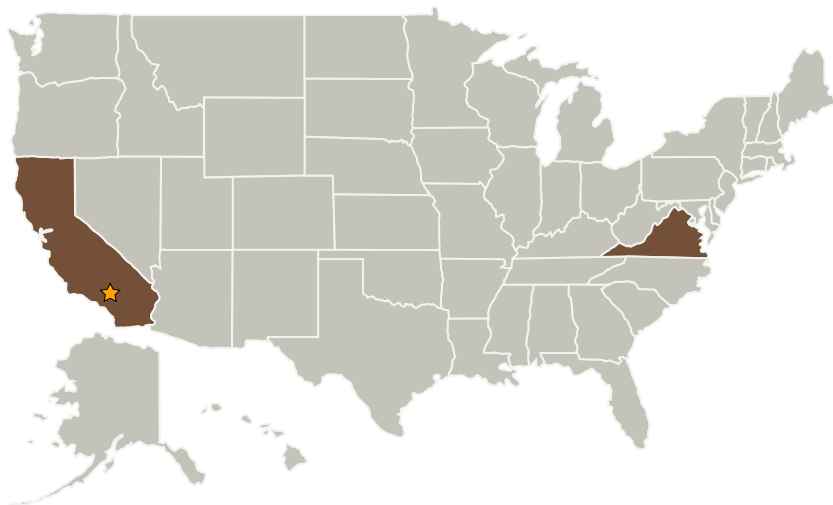
Completed Technology Project (2006 - 2007)



Project Introduction

An Integrated Sensing and Control of Aeroelastic Deformation (ISCAD) Toolbox is proposed. Specifically, this toolbox will provide a methodology, both hardware and software, that serves to compensate for uncommanded deflections of flight systems. This toolbox is meant to augment existing procedures for design of both aircraft and autopilots by providing additional capabilities that address aspects unique to aeroelastic control. The sensors are provided by the flow and loads measuring systems pioneered by Tao Systems while the control synthesis builds upon expertise at the University of Florida in flexible-wing aeroelasticity. The approach integrates state-of-the-art sensing capability with advanced control synthesis systems. In this way, a collaborative partnership is formed that is ideally suited to develop the ISCAD Toolbox.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Tao of Systems Integration, Inc.	Supporting Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Hampton, Virginia

Primary U.S. Work Locations

California	Virginia
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Siva M Mangalam

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
 - └ TX15.1 Aerosciences
 - └ TX15.1.3 Aeroelasticity